Title (en)

Method of manufacturing high purity cobalt sputter targets having a low magnetic permeability

Title (de)

Verfahren zur Herstellung von Sputter-Targets aus hoch reinem Kobalt, die einer niedrigen magnetischen Permeabilität aufweisen

Title (fr)

Procédé de fabrication des cibles de pulverisation en cobalt très pur à perméabilité magnétique basse

Publication

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Application

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Priority

US 43098899 A 19991101

Abstract (en)

[origin: US6176944B1] The present invention provides a high purity cobalt sputter target having a single phase h.c.p. structure and a magnetic permeability less than the intrinsic magnetic permeability of the material. Substantially pure cobalt is cast and slowly cooled, such as at a rate of 15° C./min. Or less, to form a cast target of single phase h.c.p. crystallographic structure. This cast target is hot worked at a temperature of at least about 1000° C. to impart a strain of about 65% or greater into the cobalt material, followed by a slow, controlled cooling to room temperature, such as at a rate of 15° C./min. or less, to maintain the single phase h.c.p. crystallographic structure. The cooled target is then cold worked at substantially room temperature to impart a strain of about 5-20%. The sputter target of the present invention processed by this method has a magnetic permeability of less than about 9, grain sizes in the size range of about 70-160 mum, and average grain size of about 130 mum.

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C22C 19/07; C22F 1/10

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